
Maternal microchimerism in patients with biliary atresia: Implications for allograft tolerance.

Journal: Chimerism

Publication Year: 2012

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PubMed link: 22772071

Funding Grants: Training Program in Stem Cell Research at UCSF

Public Summary:

Scientific Abstract:

Maternal-fetal cellular trafficking during pregnancy results in bidirectional microchimerism with potentially long-term consequences for the mother and her fetus. Exposure of the fetus to maternal cells results in tolerance to non-inherited maternal antigens (NIMA) and may therefore impact transplant outcomes. We investigated the rates of graft failure and retransplantation after parental liver transplantation in pediatric recipients with biliary atresia (BA), a disease with high levels of maternal microchimerism. We observed significantly lower rates of graft failure and retransplantation in BA recipients of maternal livers compared with BA recipients of paternal livers. Importantly, recipients without BA had equivalent transplant outcomes with maternal and paternal organs, suggesting that increased maternal microchimerism in BA patients may be the underlying etiology for tolerance. These results support the concept that prenatal exposure to NIMA may have consequences for living-related organ transplantation.

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